Lower GI Bleeding

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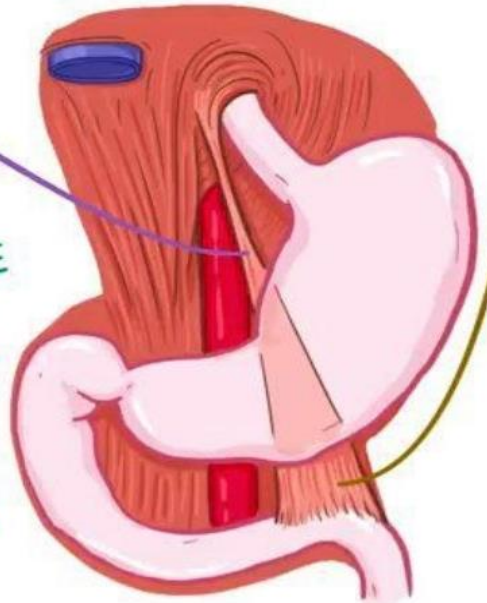
GASTROINTESTINAL BLEEDING

UPPER GI BLEEDING

* ABOVE LIGAMENT of TREITZ

* CAUSES
  - ~ PEPTIC ULCER DISEASE
  - ~ EROSIVE ESOPHAGITIS
  - ~ ESOPHAGEAL VARICES
  - ~ AVM
  - ~ MALLORY-WEISS SYNDROME
  - ~ CANCERS of the UPPER GI TRACT



LOWER GI BLEEDING

* BELOW LIGAMENT of TREITZ

* CAUSES
  - ~ DIVERTICULOSIS
  - ~ HEMORRHOIDS
  - ~ COLORECTAL CANCER
  - ~ AVMs
  - ~ INTESTINAL ISCHEMIA

VISIBLE or OCCULT

↳ no visible evidence

↳ DETECTED by FECAL OCCULT BLOOD TEST or signs of IRON DEFICIENCY ANEMIA

Definition

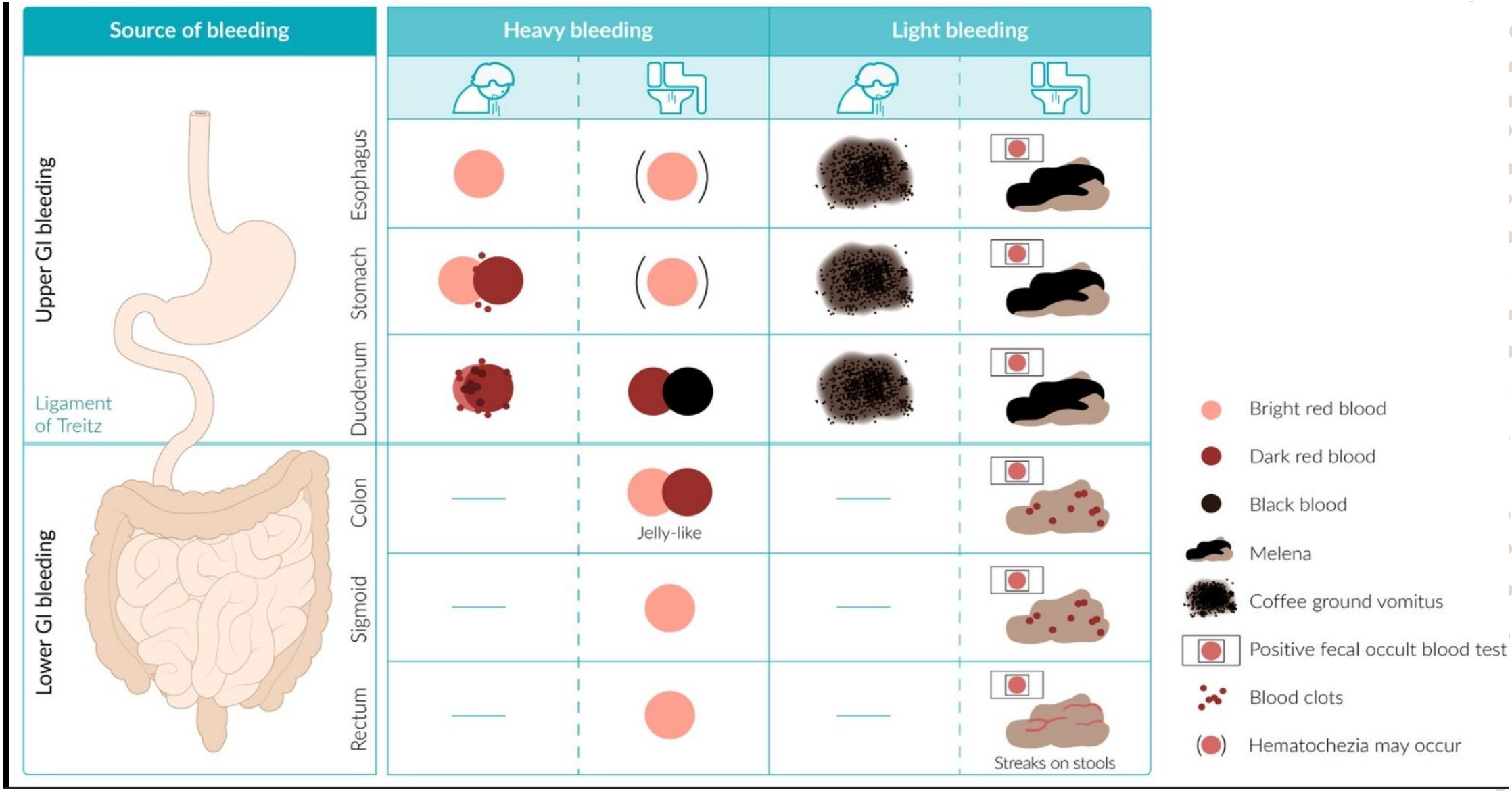
- Defined as bleeding derived from a source distal to the ligament of Treitz which connects the duodenum of the small intestines to the diaphragm and marks the beginning of the jejunum.
- Bleeding from the lower gastrointestinal tract accounts for about 20% of all cases of acute gastrointestinal bleeding
- GI bleeding is not a disease, but a symptom of a disease
- Diverticulosis – most common source of GI bleeding in patients over age 60, usually painless
- Angiodysplasia – 2nd most common source in patients over age 60

EPIDEMIOLOGY

- The majority of the LGI bleeding is self limiting
- More than 75% of bleeding stop spontaneously with 10% re-bleeds in 1 year and 50% in 10 years
- In 90% of the cases colon is the source of bleeding
- The incidence increase with age
- The mortality less than 5%
- Intussusception is the most common cause in the pediatric age
- And the Diverticular disease is the most common causes in adults

Sign and symptoms

- **Hematochezia** (the passage of fresh blood in stool)
- **bloody diarrhea**
- **anemia / hypovolemia** due to hemorrhage(e.g. pallor, weakness, syncope)
- Nonspecific symptoms may include dyspnea, abdominal pain, chest pain, and fatigue


Source of bleeding
Heavy bleeding
Light bleeding
Upper GI bleeding
Esophagus
Stomach
Duodenum
Ligament of Treitz
Lower GI bleeding
Colon
Sigmoid
Rectum
Jelly-like
Streaks on stools
Bright red blood
Dark red blood
Black blood
Melena
Coffee ground vomitus
Positive fecal occult blood test
Blood clots
Hematochezia may occur

There are three types of bleeding :

- 1. Massive bleeding
- 2. Moderate bleeding
- 3. Occult bleeding

1. Massive bleeding

- Only 10-20% patients present with massive bleeding
- Large volume of bright red blood per rectum or hematochezia
- Usually in elderly patient
- Hemodynamic unstable SBP <90 mmHg HR > 100

Low urine output

- Hemoglobin level drop to 6 g/dl for males is 14 to 18 g/dl; that for females is 12 to 16 g/dl
- Bleeding more than 1.5 L / day For 3 days
- Mortality rate more than 21%

2. Moderate bleeding

- May present as hematochezia or melena
- Melena : dead RBCs with stool, dark colour unlike hematochezia (more associated with upper GI bleeding)
- The patient with any age
- Hemodynamic stable

3.Occult bleeding

- Chronic slow blood loss may go unnoticed but leads to iron deficiency anemia over time.
- Common in conditions like colon cancer or small intestinal bleeding disorders.◦

- Patient with any age
- Presented with microcytic hypochromic anemia due to chronic blood loss

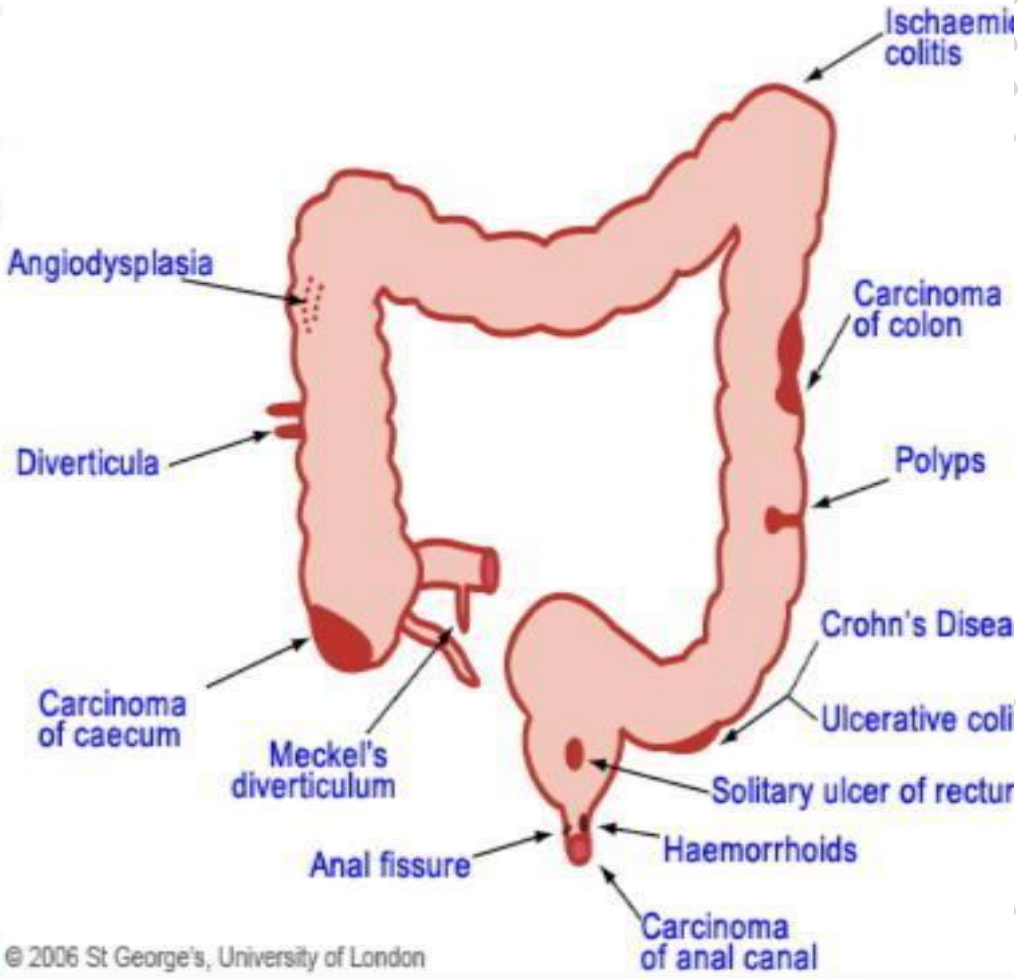
Risk factors

- Low fiber diet
- Obesity , physical inactivity
- Antithrombotic use, eg. Antiplatelet therapy, anticoagulants.
- NSAIDs and aspirin
- Advancing age

Table 30.1 Most Common Causes of Lower Gastrointestinal Bleeding

Diverticulosis
Hemorrhoids
AVM/angiodysplasia
Postpolypectomy bleeding
Inflammatory bowel disease
Neoplasm
Infection
Ulceration
Aortoenteric/graft-enteric fistula
Meckel diverticulum

AVM, arteriovenous malformation.



	Causes	Frequency
Colorectal (80%)	Diverticular disease	5.2-42%
	Angiodysplasia	1.2-4%
	Neoplasm	2.9.19%
	Inflammatory bowel disease	
	Ischemic colitis	7-18%
	Infectious colitis	2.6%
	Radiation proctitis	9-13%
	Anorectal disease (haemorrhoids, fissurae)	20%
	Post-polypectomy/post-anastomotic bleding	0-12.8%
Small bowel source (10%)	AV malformations	
	Meckel diverticulum	
	IBD	
	Neoplasia	
UGI source (10%)	Vasculitis	
	Ulcer	
	Neoplasm	

Specific causes of LGI bleeding

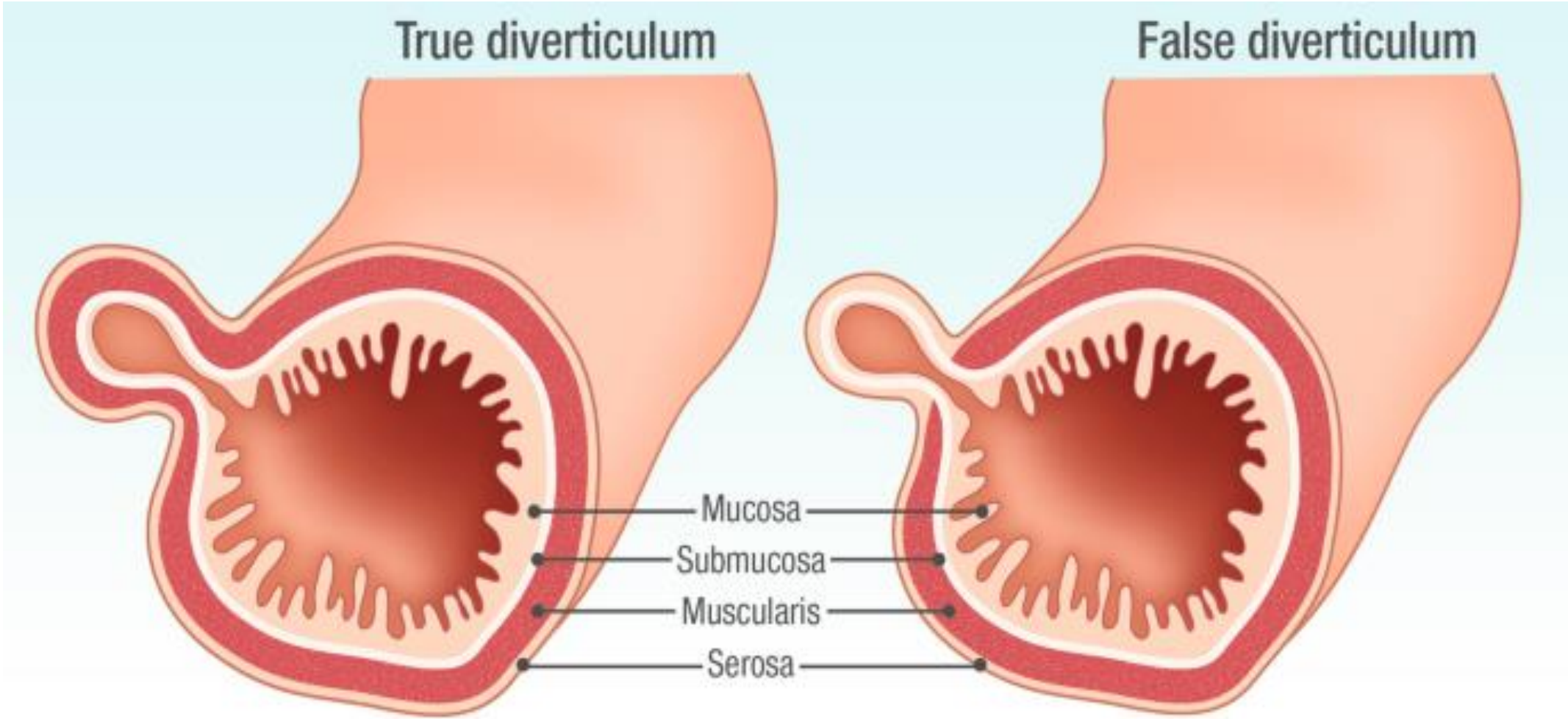
- **Diverticular disease** :
- **Most common** cause of LGI bleeding
- **Most common** cause of lower massive GI bleeding
- **Most common** cause of GI bleeding over the age of 60
- It involves the development of small, bulging pouches in the digestive tract (diverticulosis)
- Can be classified to true or false diverticulosis

Pathogenesis:

- increased intraluminal pressure—inner layer of colon bulges through the focal area of weakness in the colon wall (usually an area of blood vessel penetration). Bleeding can be severe in about 5% of patients.

- **True Diverticulum** ⟹ A type of diverticulum that affects all layers of the intestinal wall
- -Rare
- -Typically, congenital
- -Most commonly occurs in the cecum

- **False Diverticulum** ⟹ Type of diverticulum that involves only the mucosa and submucosa
- -Most common type of gastrointestinal diverticula
- -Typically acquired
- -Localized In the sigmoid colon


True diverticulum
False diverticulum
Mucosa
Submucosa
Muscularis
Serosa

Clinical:

-Usually asymptomatic

-Abdominal Discomfort or pain especially if associated with chronic constipation

-Diverticular bleeding

Complications:

Abscess, Fistula, peritonitis, perforation, diverticulitis and intestinal obstruction

Diagnosis:

Barium enema/colonoscopy.

Treatment:

Usually, bleeding stops spontaneously.

-Endoscopic hemostasis during colonoscopy.

-Angiography with vessel embolization

Diverticulosis: Presence of multiple colonic diverticula without evidence of infection.

Diverticulitis: Inflammation or infection of diverticula

Diverticulitis is a complication of diverticulosis

Angiodysplasia:

Definition: Tortuous, dilated veins in submucosa of the colon (usually proximal) wall. A common cause of lower GI bleeding in patients over age 60.

Bleeding is usually low grade, but 15% of patients may have massive hemorrhage if veins rupture. & In about 90% of patients, bleeding stops spontaneously.

Diagnosed by:

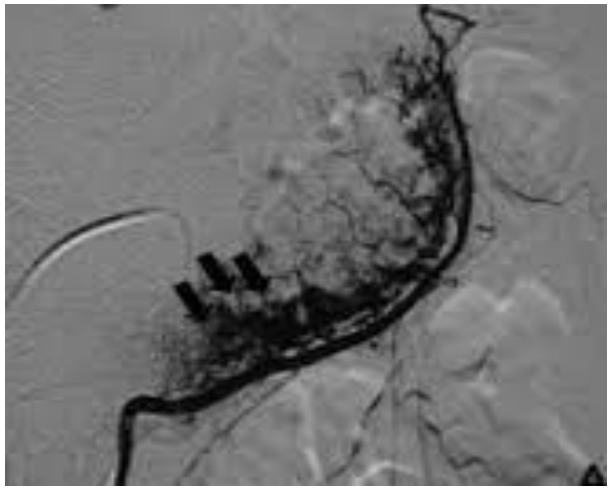
Colonoscopy – Used in stable patients with intermittent or mild bleeding

Angiography – Used in unstable patients with active massive bleeding

Treated by:

Colonoscopy coagulation of the lesion. If bleeding persists, a right hemicolectomy should be considered.

ANGIOGRAPHY



COLONOSCOPY

ANORECTAL DISEASES

Hemorrhoid (commonly known as piles):

arise from congestion of the internal and/or external venous plexuses around the anal canal.

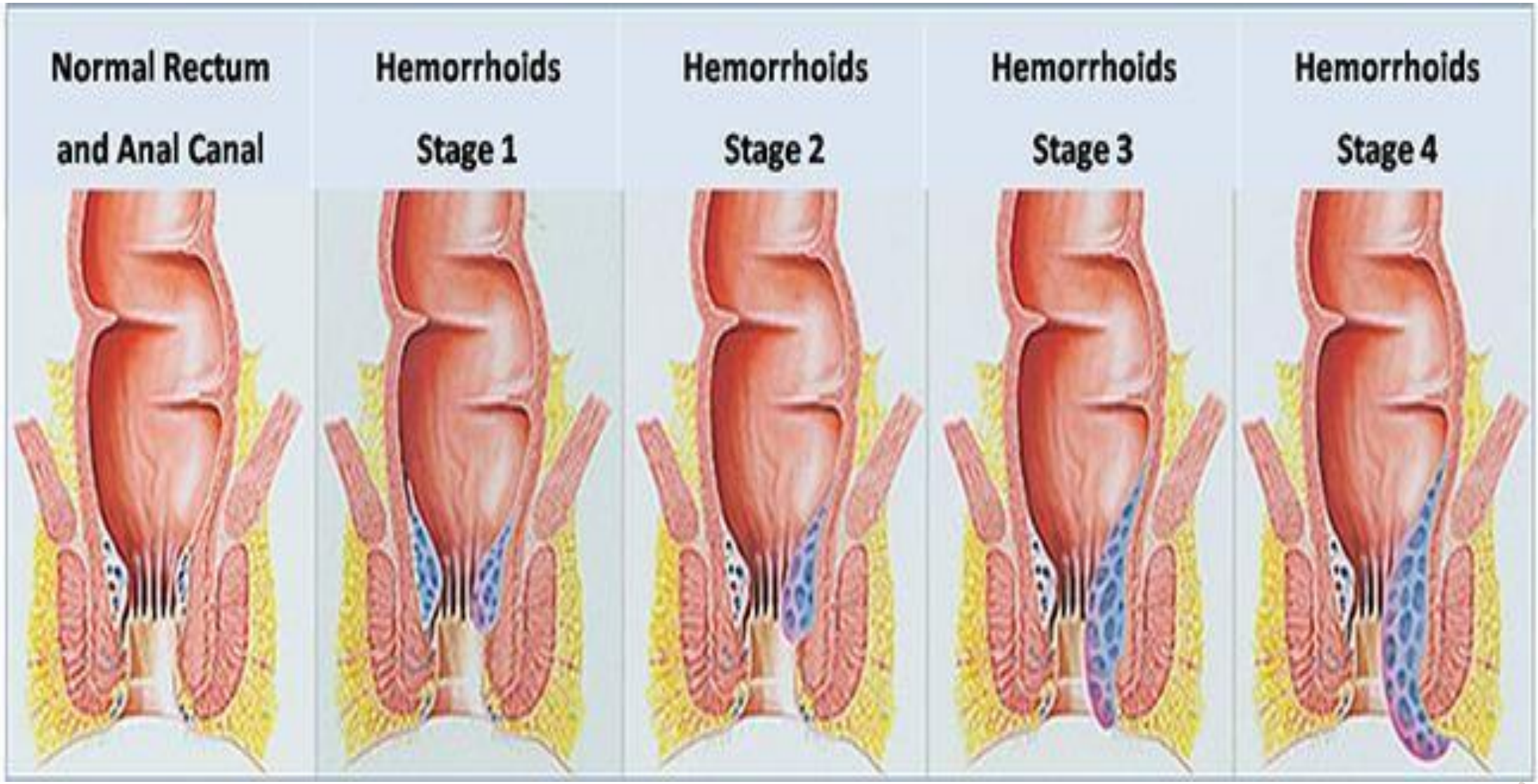
They are extremely common in adults.

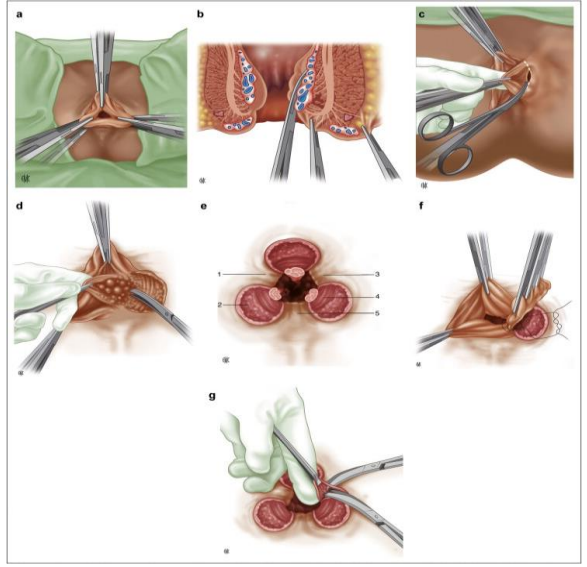
The etiology is unknown, although they are associated with increased intra abdominal pressure i.e. : with constipation and straining, and may develop for the first time during pregnancy. hemorrhoids are classified into :

Internal hemorrhoid : located proximal to dentate line , Usually **painless**, thus banding, ligation can be done.

External hemorrhoid : located distal to dentate line These are **painful**, usually self limited.

1st degree	Painless bleeding , no prolapse	Medical therapy by dietary fiber,stool softeners, sitz bath Operative by rubber band ligation , infrared photocoagulation, sclerotherapy
2nd degree	Prolapse through anus during straining but reduces spontanrously	Same as above
3rd degree	Prolapse through anus, requires manual reduction	Rubber band ligation, sclerotherapy, operative hemorrhoidectomy
4th degree	Cannot be reduced , thrombosed	operative hemorrhoidectomy


Normal Rectum
and Anal Canal
Hemorrhoids
Stage 1
Hemorrhoids
Stage 2
Hemorrhoids
Stage 3
Hemorrhoids
Stage 4



Indications for Hemorrhoidectomy:

1.Third- and fourth-degree hemorrhoids

2. Non-cured second-degree hemorrhoids by non-operative treatments

3. Fibrosed hemorrhoids

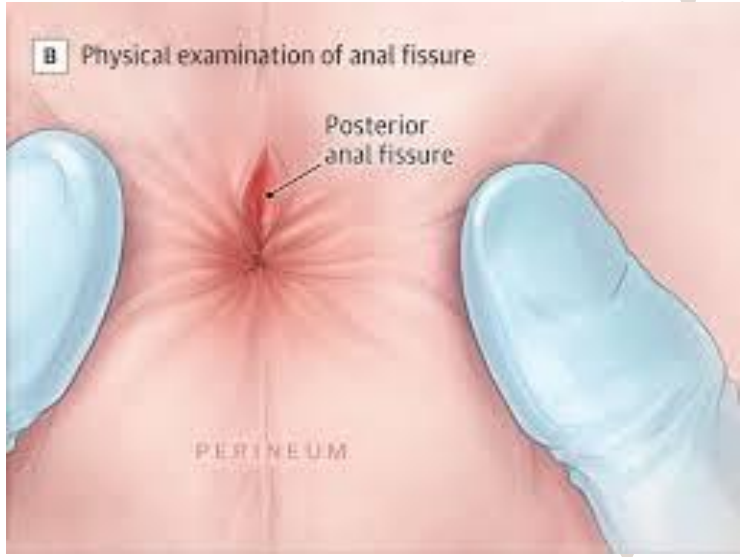
4. Large hemorrhoidal bleeding sufficient to cause anemia

Anal Fissure:

Small tear in the thin, moist tissue that lines the anus it is a cause of extremely painful bleeding per anus. Fissure is usually presenting with associate infection

- Most common site: posterior midline (less elasticity and increased density of longitudinal muscle extensions)
- Causes and Risk Factors :

  constipation, straining, childbirth, anal intercourse and passing large stool



Treatment

Conservative/medical treatment: 90% of cases resolved

1. **Dietary Changes**

-Increase Fiber Intake: High-fiber foods (fruits, vegetables, whole grains) help soften stools and reduce straining

-Hydration

2. Stool Softeners (ex-docusate sodium)

3. **Topical Treatments** (to relax internal sphincter)

-Topical Nitroglycerin, Calcium Channel Blockers (nifedipine), and Hydrocortisone cream

4. Warm Sitz Baths

Surgical: lateral internal sphincterotomy

Prevention :

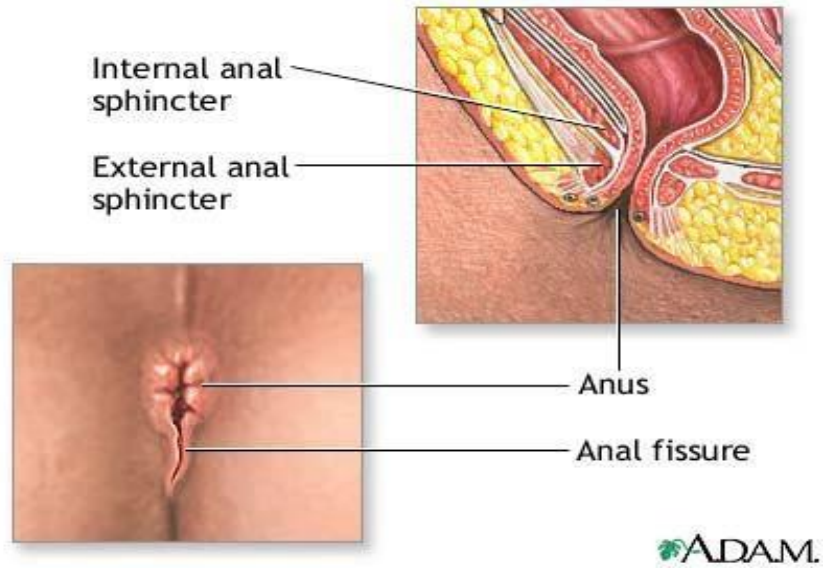
It can be prevented by the following conditions (similar to that of the conservative treatment) :

1 Taking fiber rich diet

2 Staying hydrated

3 Considering the use of fiber supplement such as **Metamucil**

4 Exercise



Ischemic colitis :

Ischemic colitis arises from **low flow rate** to the large intestine due to narrowed or blocked blood vessels.

- Patients usually older than **age 60 years**
- Watershed areas more often affected (e.g., splenic flexure, rectum)

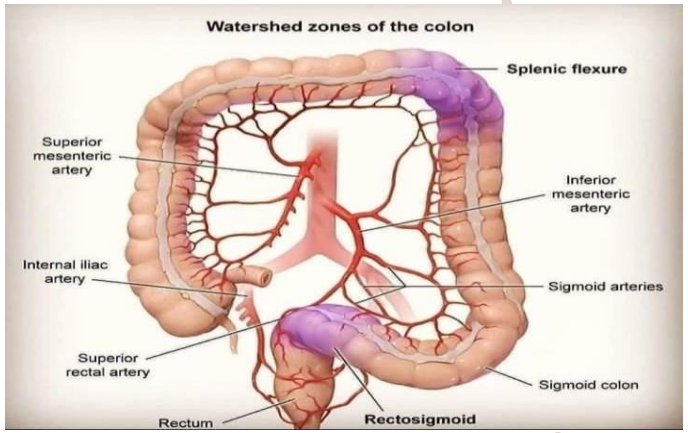
Symptoms: include mild/diffuse abdominal pain, cramping, bloody diarrhea, severe hemodynamically instability and acidosis

Diagnosed by: clinical presentation, colonoscopy or CT scan

Can be associated with

estrogen use, hypercoagulable

states, vasculitis.



History

History of diverticulosis &angiodysplasia: painless bleeding (blood alone)

History of anorectal: Fresh blood on toilet paper (blood after defecation), perianal itching, or rectal prolapse.

History of colorectal cancer: blood mixed with or on the surface of stool (rectum carcinoma) , weight loss, tenesmus and decrease caliber of stool.

History of Ischemic colitis: mild abdominal pain, cramping, bloody diarrhea.

Risk factors:

1. **Diverticulosis & anorectal conditions**: constipation
2. **Colorectal cancer**: family hx of cancer
3. **Ischemic colitis**: history of hypotension.

Physical Examination

1. **Vital signs and postural hypotension**: hypotension, heart rate (assess the hemodynamic stability)

2. **Signs of malignancy (cachexia).**

3. **Digital rectal examination:** mass and confirmation of lower GIB

4. NG tube is necessary to exclude UGIB

Management

1.**NPO**

2. Insert **two large bore peripheral IVs** (for possible fluid resuscitation and blood transfusion) and to obtain blood samples for laboratory studies

3. Accessing the **hemodynamic stability** (stable or unstable):

-stable patient: restrictive transfusion strategy and referring to endoscopy

-Unstable patient: ABCDE approach, consider intubation and urgent volume resuscitation

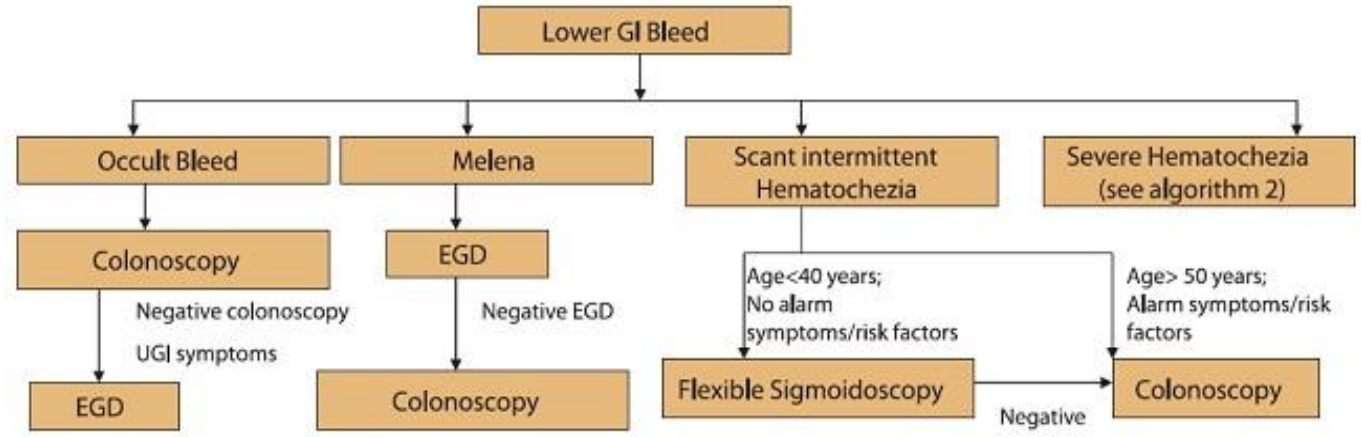


Figure 1. Management of LGIB.

Investigation - labs

1. Stool guaiac for occult blood.

2.CBC: Hemoglobin/hematocrit level (may not be decreased in acute bleeds): A hemoglobin level >7 to 8 g/dL is generally acceptable in young, healthy patients without active bleeding. However, most elderly patients (especially those with cardiac disease) should have a hemoglobin level >10 g/dL. A low mean corpuscular volume (MCV) is suggestive of iron deficiency anemia (chronic blood loss). Patients with acute bleeding have normocytic red blood cells.

-Hematocrit level goal for young patients is 20-25% and 30% in high risk patients and elderly

3. Coagulation profile (platelet count, PT, PTT, INR).

4. LFTs, renal function.

5. The BUN–creatinine ratio is elevated with upper GI bleeding. This is suggestive of upper GI bleeding if patient has no renal insufficiency. The higher the ratio, the more likely the bleeding is from an upper GI source.

6. Endoscopy/colonoscopy

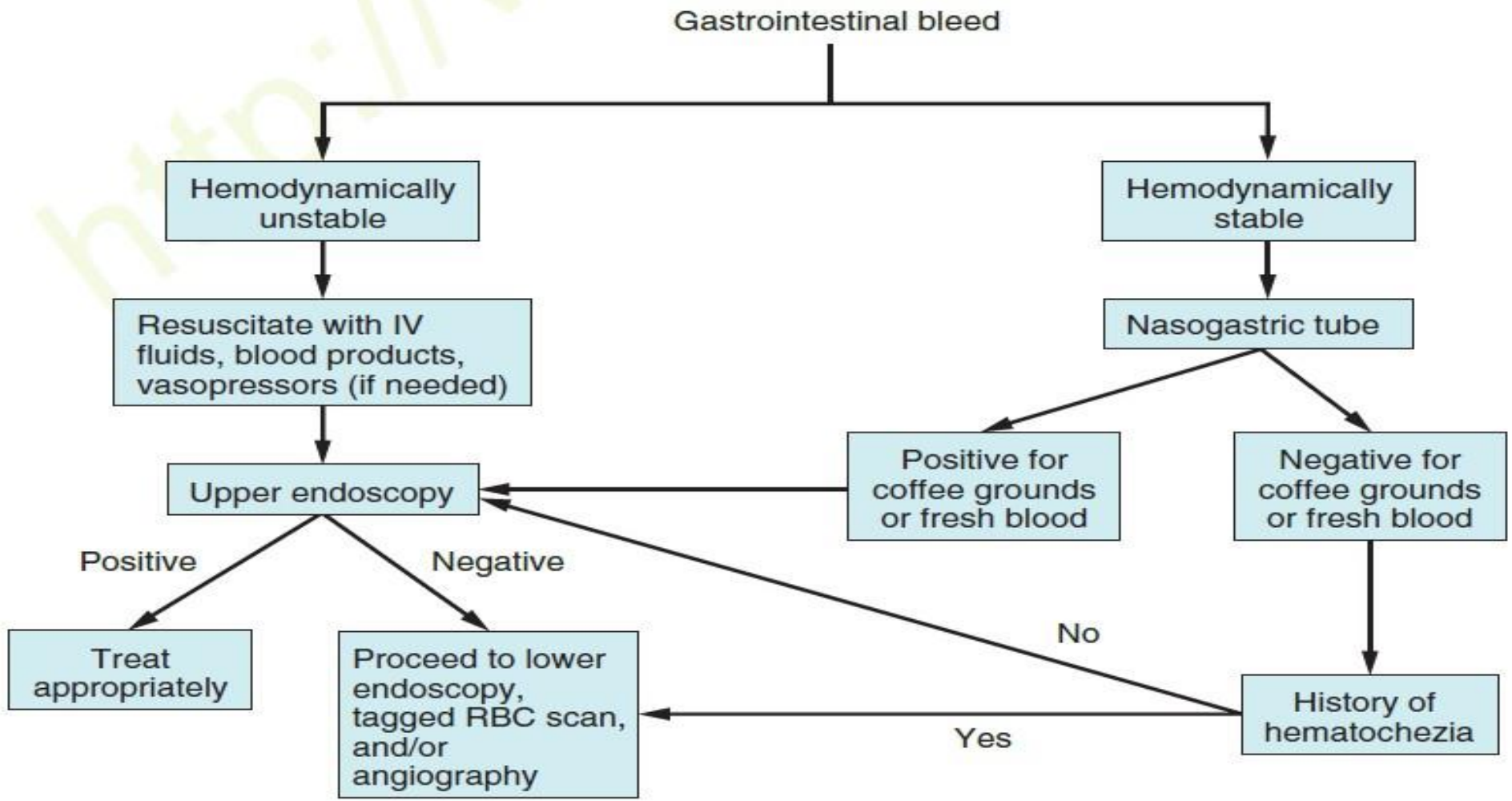


FIGURE 25-2 Evaluation of patient with gastrointestinal bleeding. IV, Intravenous; RBC, red blood cell.

Summary

1. **Rapid History and Physical Examination**: Gather information about the bleeding, ask about risk factors, and perform a physical exam.
2. **Assess Hemodynamic Stability**: Establish IV access, provide fluids or transfusions as necessary.
3. **Laboratory Tests**: CBC, coagulation studies, and other relevant tests.
4. **Assess the Severity of Bleeding**: Classify based on symptoms and vital signs.
5. **Nasogastric Tube**: To rule out an upper GI source.
6. **Begin Imaging/Endoscopic Workup**: Colonoscopy or imaging to identify the source.
7. **Identify and Treat the Source**: Once identified, treat accordingly, whether it's through endoscopic, medical, or surgical means.
8. **Hospitalization**: Monitor and provide further care if required.

Thank you

إذا ما لم يفدك العلم خيرا * * * فخير منه أن لو قد جهلتا

وإن ألقاك فهمك في مهاوٍ * * * فليتك ثم ليتك ما فهمتا